

vital characteristics and qualities of form which the parental individuals possess. It is simply a larger or smaller quantity of the parental material, in fact, of its albuminous protoplasm, or cell-substance, which passes to the produced individual. But together with the material, its vital properties—that is, the molecular motions of the plasma—are transmitted, and these then manifest themselves in its form. Inheritance by sexual breeding loses very much of the mysterious and wonderful character which it at first sight possesses for the uninitiated, if we consider the above-mentioned series of the different modes of propagation, and their connection one with another. It at first sight appears exceedingly wonderful that in the sexual propagation of man, and of all higher animals, the small egg, the minute cell, often invisible to the naked eye, is able to transfer to the produced organism all the qualities of the material organism, and, no less mysterious, that at the same time the essential qualities of the paternal organism are transferred to the offspring by means of the male sperm, which fructifies the egg-cell by means of a viscid substance in which minute thread-like cells or zoosperms move about. But as soon as we compare the connected stages of the different kinds of propagation, in which the produced organism separates itself more and more as a distinct growth from the parental individual, and more or less early enters upon its independent career; as soon as we consider, at the same time, that the growth and development of every higher organism only depends upon the increase of the cells composing it—that is, upon their simple propagation by division—it becomes quite evident that all these remarkable processes belong to one series.